

ILLINOIS POLLUTION CONTROL BOARD

June 1, 2006

IN THE MATTER OF: )  
 )  
 PETITION OF LAFARGE MIDWEST, INC. ) AS 06-3  
 FOR BOILER DETERMINATION ) (Adjusted Standard - Land)  
 THROUGH ADJUSTED STANDARD )  
 PROCEEDINGS PURSUANT TO 35 Ill. )  
 Adm. Code 720.132 AND 720.133 )

OPINION AND ORDER OF THE BOARD (by A.S. Moore):

Lafarge Midwest, Inc. (Lafarge) filed a petition seeking the Board’s determination that two raw mill dryers operated at its Joppa Portland Cement Manufacturing Plant (Plant) located at 2500 Portland Road, Grand Chain, Massac County may both be considered a “boiler” as that term is defined at 35 Ill. Adm. Code 720.110 (definitions). A boiler determination would allow Lafarge’s dryers to be used for the combustion of off-specification used oil for energy recovery in compliance with 35 Ill. Adm. Code 739.161. The Illinois Environmental Protection Agency (Agency) recommends that the Board grant Lafarge’s petition.

In today’s opinion, the Board finds on the basis of the record before it that Lafarge has provided sufficient justification under 35 Ill. Adm. Code 720.132 for a boiler designation for the two raw mill dryers at the Plant.

This opinion will first describe the general procedure through which a petitioner may seek a boiler designation before providing the procedural and factual backgrounds of this case. The Board then analyzes the criteria by which the Board is to make boiler determinations on a case-by-case basis. Finally, the Board reaches its conclusion and issues its order.

**BOILER DESIGNATION PROCEDURE AND JUSTIFICATION**

In its Resource Conservation and Recovery Act (RCRA) waste disposal regulations, the Board has adopted standards for the management of used oil. 35 Ill. Adm. Code 739.100 *et seq.*; *see RCRA Update, USEPA Regulations (July 1, 1992 through December 31, 1992), R93-4 (Sept. 23, 1993) (adopting new Part 739); RCRA Update, USEPA Regulations (April 24, 1984 through June 30, 1985), R85-22 (Jan. 9, 1986) (adopting provisions regarding boiler determinations).* Specifically, those used oil regulations allow burning of off-specification used oil for energy recovery in a limited number of devices including “[i]ndustrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes.” 35 Ill. Adm. Code 739.161(a)(2)(A).

The Board has also promulgated regulations providing procedures and criteria for making a determination that certain devices are “boilers” that may be used for burning off-specification used oil, even though those devices do not otherwise meet the definition of “boiler.” *See* 35 Ill.

Adm. Code 720.110 (defining “boiler” as enclosed device using controlled flame combustion and having specified characteristics); 35 Ill. Adm. Code 720.132 (Boiler Determinations); 35 Ill. Adm. Code 720.133 (Procedures for Determinations).

The Board’s boiler determination regulations provide that a petitioner must seek a boiler determination through procedures for an adjusted standard: “[t]he Board will use the procedures of Subpart D of 35 Ill. Adm. Code 104 for determining . . . whether a particular enclosed flame combustion device is a boiler.” 35 Ill. Adm. Code 720.133; *see* 35 Ill. Adm. Code 104.400 - 104.428 (Adjusted Standards). Among other requirements, Subpart D requires that a petition for a boiler determination must contain specific information. *See* 35 Ill. Adm. Code 104.406.

“The burden of proof in an adjusted standard proceeding is on the petitioner.” 35 Ill. Adm. Code 104.426. “If the regulation of general applicability specifies a level of justification for an adjusted standard, the Board may adopt the proposed adjusted standard, if the petitioner proves the level of justification specified by the regulation of general applicability.” 35 Ill. Adm. Code 104.426(b); *see* 415 ILCS 5/28.1(b) (2004). As noted above, the Board has specified the level of justification for making a boiler determination in Section 720.132. 35 Ill. Adm. Code 720.132. The Board determines on a case-by-case basis whether a device is a boiler, even though it does not otherwise meet the definition of one, by considering six criteria. 35 Ill. Adm. Code 720.132(a-f). Those criteria are: the extent to which the unit provides for recovering and exporting thermal energy; the extent to which the combustion chamber and energy recovery equipment are of integral design; the efficiency of energy recovery; the extent to which exported energy is used; the extent to which the device is in common and customary use as a “boiler;” and other relevant factors. *Id.* The Board addresses each of these six factors individually below under “Criteria for Determination.”

### **PROCEDURAL BACKGROUND**

On March 29, 2006, Lafarge petitioned the Board (Pet.) for a boiler determination through adjusted standard proceedings pursuant to 35 Ill. Adm. Code 720.132 and 720.133. Lafarge waived its right to a hearing on the petition. Pet. at 49, *see* 35 Ill. Adm. Code 104.406(j) (requiring statement requesting or waiving hearing on petition).

The Act and the Board’s regulations require publication of notice of a petition for an adjusted standard in a newspaper of general circulation in the area likely to be affected by the petitioner’s activity. 415 ILCS 5/28.1(d)(1) (2004); 35 Ill. Adm. Code 104.408(a). The petitioner must publish notice within 14 days of filing a petition for an adjusted standard with the Board. 415 ILCS 5/28.1(d)(1) (2004); 35 Ill. Adm. Code 104.408(a). As required, Lafarge on April 27, 2006 timely filed with the Board proof of publication indicating *The Metropolis Planet* published notice of the petition on April 12, 2006. *See* 35 Ill. Adm. Code 104.410 (requiring filing of certificate within 30 days after filing petition). The Board received no request to hold a hearing in this matter.

On May 11, 2006, the Agency filed its recommendation (Rec.). The Agency stated that, since 2004, it had discussed the requirements for boiler determinations with Lafarge. Rec. at 1. The Agency reports that Lafarge has satisfactorily addressed its questions and has incorporated

that information into its petition. Rec. at 2. Accordingly, the Agency recommends that the Board grant Lafarge's petition and designate the two raw mill dryers at the Plant as boilers. Rec. at 3.

## **FACTUAL BACKGROUND AND PETITION CONTENTS**

### **Plant Operations**

Lafarge owns and operates the Plant, which is located adjacent to the Ohio River at the common address of 2500 Portland Road, Grand Chain in Massac County. Pet. at 2; Pet., Exh. A (aerial photograph of vicinity of Plant). The Plant began operation in 1960 and has since undergone improvements and expansions. Pet. at 15. Lafarge characterizes Massac County as "predominantly rural" (Pet. at 2) and states that the Plant is "remote from any significant residential development" (Pet. at 48; Pet., Exh B (map of population density in vicinity of Plant)). "As of January 1, 2005, Lafarge employed 124 full-time employees," including 43 salaried employees, with a total annual payroll for 2004 of approximately \$7,737,000. Pet. at 15.

The Plant "manufactures Portland cement, which is the active ingredient of concrete." Pet. at 3. While cement can be manufactured through "wet" or "dry" methods, the Plant uses the dry method in which Lafarge grinds, mixes, and feeds raw materials in a dry state to its two cement kilns. Pet. at 3. Lafarge reports that "limestone rock is the principal raw material used" in its manufacturing process. *Id.* Limestone and other raw materials primarily arrive at the Plant by Ohio River barges. Pet. at 3, 10. After unloading and screening these shipments, Lafarge conveys them "to outside storage piles, covered storage piles, concrete storage bins, and enclosed steel tanks." Pet. at 10. Through a number of mechanisms, Lafarge gradually reclaims these raw materials from storage for use in its manufacturing process. *Id.*

In the first stage of that process, Lafarge forms a "raw mix" consisting mostly of limestone and feeds it into the raw mill system. Pet. at 11. Because the raw materials are generally wet before processing, "[t]he raw mix is then dried by direct contact with the hot dry gas produced by the Raw Mill Dryers." *Id.* After drying, the raw mix is ground to a fine consistency. *Id.* Once ground, "coarser material is mixed with new raw material and sent back through the drying and grinding processes." *Id.* Fine material is conveyed to storage near the feed end of the cement kilns. *Id.*

"After introduction to the kiln, the raw material is heated to almost 3,000° F." Pet. at 4. The kilns transform the raw materials into "clinker," which is ground into finished Portland cement. Pet. at 12. Because the heat of the kilns drives off additional moisture and triggers chemical reactions yielding gaseous products, "[t]he ratio of raw feed to clinker is approximately 1.5 to 1." *Id.* After leaving the kilns, the clinker undergoes air-cooling before being conveyed to storage. Pet. at 12-13.

Lafarge operates two finish mill systems in which it combines clinker with a small amount of gypsum and then grinds the mix to a fine particle size. Pet. at 4, 13. Lafarge then conveys the finished Portland cement product to storage silos, from which the product can be transferred to trucks or river barges. Pet. at 13.

### **Plant Emissions**

Lafarge notes that, to comply with federal and state emissions regulations, it submits to the Agency an Annual Emissions Report (AER) regarding activities at the Plant. Pet. at 15. In its most recent AER filed March 15, 2005, Lafarge reported the following emissions for the entire facility: carbon monoxide (CO), 448 tons/year; lead, 0.14 tons/year; NH<sub>3</sub>, 1.4 tons/year; nitrogen oxides (NO<sub>x</sub>), 3,310 tons/year; particulate matter (PM), 256 tons/year; particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM<sub>10</sub>), 183 tons/year; PM<sub>2.5</sub>, 30 tons/year, sulfur dioxide (SO<sub>2</sub>), 745 tons/year; and volatile organic material (VOM), 163 tons/ year. Pet at 15-16; *see* Pet, Exh. D (2004 AER).

Lafarge states that, on January 14, 2004, the Agency issued it a construction permit authorizing the Plant's two raw mill dryers to use both natural gas and on-specification used oil as fuels. Pet. at 13; *see* Pet., Exh. C (construction permit 03080024). The construction permit allows the following emissions: NO<sub>x</sub>, 16.60 tons/year; CO, 4.15 tons/year; SO<sub>2</sub>, 39.00 tons/year; PM, 0.10 tons/ year; and VOM, 0.50 tons/year. Pet. at 14; Pet., Exh. C at 2.

Lafarge reports that it controls emissions from its raw mill system through “modern, high-efficiency fabric filter baghouse particulate control systems.” Pet. at 21. Lafarge further reports that “these baghouse systems typically achieve greater than 99.9% overall control efficiency.” *Id.* Because these filters capture dried raw materials entrained in exhaust gases and allow those materials to be returned to the production process, Lafarge argues that it has “a strong economic incentive to operate the fabric filter baghouses at maximum removal efficiency.” *Id.*

Lafarge has estimated the particulate emissions that may result from the combustion of up to 1,500,000 gallons of off-specification used oil as supplemental fuel in the raw mill dryers and has concluded that PM and PM<sub>10</sub> emissions “will be orders of magnitude lower than the emissions allowed by the CAAPP Title V Operating Permit.” Pet. at 22; *see* Pet., Exhs. D, F. Lafarge has also concluded that combustion of off-specification used oil will also comply with the construction permit issued in 2004 and allowing the use of on-specification used oil as fuel for the two raw mill dryers. Pet. at 22; *see* Pet., Exh. C. Based on these conclusions, Lafarge believes “that no modifications to the existing fabric filter baghouse control equipment will be required to further control emissions when combusting off-specification used oil fuel.” Pet. at 22. Lafarge also believes that it will require no additional pollution control equipment to control those emissions. Pet. at 22-23.

Lafarge states that, if the Board grants its petition for a boiler determination, “[t]he only consequence associated with the Board's approval . . . would be a possible change in the air emissions from the Raw Mill Dryers.” Pet. at 26. Lafarge reports that it now complies with its CAAPP emissions limits through full combustion of its fuel and the use of equipment to remove particulate matter from exhaust gases. *Id.* After investigating off-specification used oil fuel supplied by reputable marketers, Lafarge estimates that emissions resulting from the use of used oil fuels “would not exceed the existing permit limits.” *Id.*; *see* Pet., Exh. G (off-specification used oil fuel management principles for Plant). Lafarge adds that the use of used oil fuel must be

reviewed and approved by the Agency through the permit issuance and modification processes. Pet. at 23, 26-27; *see* Pet. Exh. F (CAAPP permits).

In addition to the air emissions addressed above, Lafarge reports that it “discharges process wastewater, sanitary wastewater, and stormwater runoff under NPDES Permit No. IL0004081” issued May 26, 2000. Pet. at 16-17. While that permit was effective for a period of five years, Lafarge states that it submitted a timely application for renewal and that the permit remains in effect until the Agency acts on the application. Pet. at 16. Lafarge also report that it obtained a permit on April 19, 2005 for the construction of a new sanitary wastewater treatment facility. *Id.* That facility began operation in November 2005. *Id.*

### **Relief Sought**

Lafarge notes that the Board has adopted standards for management of used oil. Pet. at 6; *see* 35 Ill. Adm. Code 739.100 *et seq.* Specifically, those regulations allow burning of off-specification used oil for energy recovery in “[i]ndustrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes.” Pet. at 6-7, citing 35 Ill. Adm. Code 739.161(a)(2)(A).

Lafarge further notes that the Board has also promulgated regulations providing procedures and criteria for determining that certain devices are “boilers” that may be used for burning off-specification used oil, even though those devices do not otherwise meet the definition of “boiler.” Pet. at 7, *see* 35 Ill. Adm. Code 720.110 (definition). “Section 720.132 establishes the criteria to be considered by the Board in making such ‘case-by-case’ determinations, and Section 720.133 mandates use of the Adjusted Standard procedures of Subpart D of 35 Ill. Adm. Code 104.” Pet. at 7, citing 35 Ill. Adm. Code 720.132, 720.133. Lafarge states that these regulations implement, in whole or in part, the state’s program for solid waste under RCRA. Pet. at 8; *see* 42 U.S.C. § 6901 *et seq.*

While Lafarge believes that its raw mill dryers meet the regulatory definition of a boiler, the Agency has advised Lafarge that it must seek a boiler determination in order to use off-specification used oil as a fuel. Pet. at 18. Because of the Agency’s advice, Lafarge states that it “would not risk an enforcement action by proceeding to utilize off-specification used oil as a fuel.” *Id.* Viewing the Agency’s interpretation as a prohibition from burning off-specification used oil, Lafarge states that “[t]here are no compliance alternatives, no capital improvements and no operational changes that would allow Petitioner to ‘comply with the regulation of general applicability.’” Pet. at 18-19.

Lafarge states that it proposes to use off-specification used oil as a cost-saving measure. Pet. at 19. Lafarge “is proposing to use approximately 1,500,000 gallons of used oil fuel per year in the Raw Mill Dryers.” *Id.* At current market prices averaging \$0.91 per gallon for specification used oil and \$0.81 per gallon for off-specification used oil, Lafarge expects to save \$88,000 annually by replacing specification used oil with off-specification used oil as fuel for its raw mill dryers. *Id.* Further, Lafarge expects the cost advantage of off-specification used oil to increase. Lafarge believes that increasing demand for natural gas will continue to outstrip new

production, resulting in higher natural gas prices. *See id.* However, Lafarge also acknowledges that market prices for specification and off-specification used oil will increase. Pet. at 20-21. While high natural gas prices might once have led some industrial facilities to convert to the use of refined oil fuels, Lafarge suggests that oil prices of \$60-\$70 per barrel have all but eliminated the incentive for that conversion. Pet. at 20. Generally high-energy prices, according to Lafarge, have increased the demand for used oil, and that increased demand will tend to increase its market price. Pet. at 20-21.

Lafarge notes that section 720.132 of the Board’s regulations provides criteria for making boiler determinations. Pet. at 29, citing 35 Ill. Adm. Code 720.132. Lafarge further notes that these criteria closely track the regulatory definition of “boiler.” Pet. at 29, citing 35 Ill. Adm. Code 720.110. Lafarge suggests that the Board’s analysis of the criteria in section 720.132 is an analysis of whether its raw mill dryers have the physical characteristics of a boiler. *See* Pet. at 29; 35 Ill. Adm. Code 720.110 (definition of “boiler”). The Board addresses each of those criteria below under “Criteria for Determination.”

Lafarge notes that sections 7.2 and 22.4(a) of the Act (415 ILCS 5/7.2, 22.4(a) (2004)) require the Board to adopt regulations that are “identical-in-substance” to hazardous waste regulations adopted by USEPA under RCRA. Pet. at 48, citing 42 U.S.C. 6921 *et seq.* Lafarge further notes that federal and state regulations provide virtually identical mechanisms for determining whether a device is a “boiler” even if it does not otherwise meet the regulatory definition of that term. Pet. at 49, citing 40 C.F.R. 260.32; *see* 35 Ill. Adm. Code 720.132. Consequently, “[a]pproval by the Board of Lafarge’s Petition would be consistent with federal law and the implementing RCRA regulations.” Pet. at 49.

Finally, although it states that “[t]he regulation of general applicability does not specify any additional information requirements,” Lafarge requests that the Board consider the action of other regulatory agencies that have made boiler determinations. Pet. at 50. Lafarge reports that the raw mill dryers at its Alpena, Michigan plant are “virtually identical” to the dryers that are the subject of this petition. *Id.* Lafarge emphasizes that the Michigan Department of Environmental Quality (DEQ) determined that the Alpena dryers “meet the physical characteristics of a ‘boiler’” and approved Lafarge’s request to use off-specification used oil in them. *Id.*; Pet., Exh. I.

### **CRITERIA FOR DETERMINATION**

Lafarge argues that it has demonstrated its raw mill dryers “satisfy each of the criteria specified at 35 Ill. Adm. Code 720.132(a) to be considered a boiler.” Pet. at 30, citing 35 Ill. Adm. Code 720.132(a); *see* 35 Ill. Adm. Code 104.406(h) (justification). In its recommendation, the Agency “does not take issue with Petitioner’s statements on this subject.” Rec. at 2. The Board addresses each of the six criteria separately below.

#### **Recovering and Exporting Thermal Energy (35 Ill. Adm. Code 720.132(a))**

Lafarge states that, in order to heat the raw material mix and drive moisture from it, the burners in the raw mill dryers are “designed to recover the maximum amount of thermal energy

in the fuel being burned.” Pet. at 30. Lafarge report that “[e]ach Raw Mill Dryer functions as a direct-fired process heater.” *Id.* Thermal energy released by the combustion of fuel is transferred to the raw materials in order to vaporize moisture contained in the pores of that material. Pet. at 30-31. The dryers then export heated and dried raw materials, hot gases, and water vapor, all of which then pass through separators for removal of the dried raw materials from the exhaust gases. Pet. at 31.

Lafarge describes its raw mill dryers as “fully enclosed with an outer shell of steel.” Pet. at 31. It characterizes the burning chamber as “lined with a high temperature resistant refractory material” and states that the “transport shaft is lined with ceramic tile.” *Id.* Consequently, Lafarge argues that “[t]his design is conducive to recovering as much energy as possible from the fuel.” *Id.*; see Pet., Exh. H (“Raw Mill System Schematic”).

On the basis of this record, the Board finds that Lafarge’s two raw mill dryers have provisions in their design and operation for recovering and exporting thermal energy released by the combustion of off-specification used oil fuel. See 35 Ill. Adm. Code 720.132(a). In this regard, the two raw mill dryers share physical characteristics with devices that meet the regulatory definition of “boiler.” See 35 Ill. Adm. Code 720.110. Accordingly, the Board’s consideration of this factor favors designating each of the two raw mill dryers as a boiler.

#### **Integral Design (35 Ill. Adm. Code 720.132(b))**

Lafarge states that “[t]he combustion chamber and energy recovery sections of each Raw Mill Dryer are integral in design and assembly to function as a single unit.” Pet. at 31. Lafarge further states that it installed the systems as one operating unit. *Id.*; see Pet., Exh. H. Lafarge asserts that, within each system, the operation of the raw mills and raw mill dryers depend upon one another. *Id.*

In addition, Lafarge argues that the Board’s definition of “boiler” includes an exemption from the “integral design” factor that applies to its dryers. Pet. at 31. Under that definition, “process heaters (units that transfer energy directly to a process stream)” “are not precluded from being boilers solely because they are not of integral design.” Pet. at 32, citing 35 Ill. Adm. Code 720.110. Lafarge argues that, “[b]ecause the Raw Mill Dryers are direct-fired process heaters where the thermal energy of the combusted fuel is transferred directly to the raw materials being processed, the element of ‘integral design’ is not a sole determinative in this proceeding.” Pet. at 32.

The record in this proceeding demonstrates that Lafarge’s two raw mill dryers are direct-fired process heaters, which share physical characteristics with devices that meet the regulatory definition of “boiler.” See 35 Ill. Adm. Code 720.110. As such, Lafarge’s two raw mill dryers qualify for the “process heater” exception under section 720.110. *Id.* Accordingly, the Board’s consideration of this factor favors designating each of the two raw mill dryers as a boiler.

#### **Efficiency of Energy Recovery (35 Ill. Adm. Code 720.132(c))**

Lafarge notes that the regulatory definition of “boiler” sets a standard for thermal energy recovery efficiency: “at least 60 percent, calculated in terms of the recovered energy compared with the thermal value of the fuel.” Pet. at 41, citing 35 Ill. Adm. Code 720.100. Lafarge reports that, in order to calculate the efficiency of energy recovery, it conducted a detailed analysis of its raw mill dryers. Pet. at 32. Specifically, Lafarge developed a heat balance, which is “essentially a detailed accounting of the distribution of heat input, heat output, and system losses.” Pet. at 40. “[H]eat balance accounting relies on actual test data, mathematical derivations, and generally accepted engineering assumptions,” and it provides input variables for the efficiency calculation. Pet. at 33, 40.

Lafarge states that it relied upon two engineering assumptions in preparing heat balance calculations. First, for the “false air” assumption taking into account expansion joints, inspection doors and ports, normal equipment wear, and other leaking into the system, Lafarge assumed a value of 10%. Pet. at 40-41. Lafarge states that, within the cement industry generally and specifically for newer combustion equipment in cement manufacturing and mineral processing facilities, 10% is “an accepted assumption.” *Id.* Second, for the “shell radiation” assumption accounting for radiant heat lost to structures surrounding the dryer, Lafarge assumed a value of 2.5 %. Pet. at 41. Lafarge also characterized this assumption as “accepted.” *Id.*

Ultimately, Lafarge determined its energy recovery efficiency by dividing the recovered energy by the thermal value of the fuel for each of the two raw mill dryers. Pet. at 41-42. These calculations resulted in a thermal energy recovery efficiency of 86.84% for the first raw mill dryer and 82.05% for the second. Pet. at 42. Lafarge argues that the efficiency of the two dryers “clearly exceeds the Section 720.110 criterion of a minimum of 60% recovery.” *Id.*

The record in this proceeding demonstrates that Lafarge’s two raw mill dryers achieve a thermal energy recovery efficiency of 86.84% for the first raw mill dryer and 82.05% for the second. With efficiency exceeding 60%, the two raw mill dryers share physical characteristics with devices that meet the regulatory definition of “boiler.” *See* 35 Ill. Adm. Code 720.110. Accordingly, the Board’s consideration of this factor favors designating each of the two raw mill dryers as a boiler.

#### **Use of Exported Energy (35 Ill. Adm. Code 720.132(d))**

Lafarge suggests that the raw mill dryers use exported energy in a manner consistent with the regulatory definition of a boiler. Lafarge notes that the definition specifies “[t]he unit must export and realize at least 75% of the recovered energy, calculated on an annual basis. In this calculation, no credit may be given for recovered heat used internally in the same unit.” Pet. at 42, citing 35 Ill. Adm. Code 720.110. Lafarge states that “[i]nternal use of the recovered heat only occurs during preheating every time the system is started” and that “preheating hours account for 1.5% of the total operating hours in a year.” Pet. at 42. Lafarge concludes that, “[w]ith the loss of 1.5% of the fuel heat input due to preheating the dryer, the annual energy recovery is estimated to be 82.40% for Raw Mill Dryer #1 and 79.85% for Raw Mill Dryer #2.” *Id.*

The record in this proceeding demonstrates that Lafarge's two raw mill dryers export and realize 82.40% and 79.85%, respectively, of the recovered energy, calculated on an annual basis. In this regard, they share physical characteristics with devices that meet the regulatory definition of "boiler." See 35 Ill. Adm. Code 720.110. Accordingly, the Board's consideration of this factor favors designating each of the two raw mill dryers as a boiler.

**Use as "Boiler" (35 Ill. Adm. Code 720.132(e))**

Lafarge argues that its raw mill dryers are functionally equivalent to boilers. Lafarge states that "[d]irect-fired dryers and process heaters are widely used in the production of cement and other non-metallic mineral products." Pet. at 42. These devices consume large amounts of fuel in order to generate the high temperatures needed to dry raw materials and ultimately produce Portland cement. Pet. at 42-43.

Lafarge states that it operates a large Portland cement manufacturing plant near Alpena, Michigan. Pet. at 43. The Michigan DEQ has granted that plant permission to use off-specification used oil as fuel in its raw mill dryers. *Id.* Lafarge states that DEQ based its approval on a demonstration that the dryers satisfied the physical boiler criteria established by USEPA and adopted by both Michigan and Illinois. *Id.*; see Pet., Exh I. (DEQ concurrence that dryer is boiler).

Lafarge contends that the raw mill dryers at the Plant and in Alpena are "virtually identical" with respect to the to the physical criteria contained in the regulatory definition of "boiler," including integral design, combustion efficiency, and energy recovery." Pet. at 44. Lafarge claims that DEQ's determination that the Alpena dryers have boiler characteristics is persuasive evidence that that the dryers in this proceeding are "in common and customary use as a 'boiler' functioning primarily to produce steam, heated fluids, or heated gases." Pet. at 44-45, citing 35 Ill. Adm. Code 720.132(e). Lafarge further claims that, if the Board grants a boiler determination in this case, that result "would be consistent with the findings of other environmental regulatory authorities." Pet. at 45.

The record in this proceeding shows that Lafarge's two raw mill dryers are commonly and customarily used as boilers functioning primarily to produce steam, heated fluids, or heated gases. Accordingly, the Board's consideration of this factor favors designating each of the two raw mill dryers as a boiler.

**Other Relevant Factors (35 Ill. Adm. Code 720.132(f))**

Lafarge states that federal used oil regulations specify both procedures and criteria for making a case-by-case determination that a particular combustion device such as its raw mill dryers should be considered a "boiler" for the purpose of using off-specification used oil fuel. Pet. at 45, citing 40 C.F.R. 260.32 (criteria), 40 C.F.R. 260.33 (procedures). Lafarge notes that the Board "has completed 'identical-in-substance' rulemakings to adopt these federal RCRA regulations as the Illinois regulations applicable to the combustion of off-specification used oil in boilers and similar combustion devices." Pet. at 45; see RCRA Update, USEPA Regulations (April 24, 1984 through June 30, 1985), R85-22 (Dec. 20, 1985).

Lafarge notes that, in the preamble accompanying publication of the rules in the *Federal Register*, USEPA explained regulations and applied them to specific fact patterns. Pet. at 45. Lafarge urges that “the justifications set forth by USEPA to explain and interpret the criteria for making ‘case-by-case’ boiler determinations can and should be relied upon by the Board.” Pet. at 46. In its preamble, USEPA elaborated on four factors that distinguish industrial boilers from non-industrial boilers with regard to allowing the burning of off-specification used oil for fuel. Pet. at 46-47, citing 50 Fed. Reg. 49164. First, because industrial boilers are less numerous and are less likely to be located in populated areas, those sources pose less risk of exposing individuals to emissions from burning off-specification used oil. Pet. at 46. Second, industrial boilers are more likely to be operated by trained personnel. *Id.* Third, industrial boilers are more likely to be “equipped with combustion controls sophisticated enough to maintain peak combustion efficiency when burning fuels the unit is not designed to burn.” *Id.*, citing 50 Fed.Reg. 49182. Finally, “many industrial furnaces and some boilers are equipped with particulate control equipment that may adequately control emissions from metal-bearing waste fuels. Pet. at 46-47, citing 50 Fed. Reg. 49182.

Addressing those factors, Lafarge first notes that its plant “is located in the sparsely populated, rural Massac County and its location is remote from any significant residential development.” Pet. at 47-8; *see* Pet., Exh. B (USEPA population density map of vicinity of plant). Second, Lafarge states that its plant and the raw mill dryers in particular are operated by trained personnel. Pet. at 48. Third, Lafarge notes that “[t]he Raw Mill Dryers are equipped with [] state-of-the-art, efficient combustors and operating controls to maximize complete combustion of the fuels.” *Id.* Finally, Lafarge states that the dryers incorporate fabric filter baghouses, cyclones, and air separators to capture dried raw materials and to control the emission of particulates and other contaminants. *Id.* Lafarge concludes that, in addition to satisfying physical criteria established by the Board, its dryer also satisfies non-physical criteria that justify combustion of off-specification used oil. Pet. at 47.

The record in this proceeding demonstrates that Lafarge’s two raw mill dryers generally satisfy these non-physical criteria established for boilers. Accordingly, the Board’s consideration of this factor favors designating each of the two raw mill dryers as a boiler.

### **CONCLUSION**

For the reasons described above, the Board finds that Lafarge has provided sufficient justification under 35 Ill. Adm. Code 720.132 and determines that each of the two raw mill dryers at its Joppa Portland Cement Manufacturing Plant is a “boiler by designation” under 35 Ill. Adm. Code 720.110. This determination allows Lafarge to use the two raw mill dryers for combustion of off-specification used oil for energy recovery in compliance with 35 Ill. Adm. Code 739.161 and subject to compliance with all other applicable federal and state permits, standards, and requirements and any modifications thereto.

This opinion constitutes the Board’s findings of fact and conclusions of law.

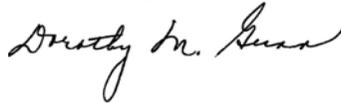
### **ORDER**

1. The Board finds that Lafarge has provided sufficient justification under 35 Ill. Adm. Code 720.132 and determines that each of the two raw mill dryers operated by Lafarge at its Joppa Portland Cement Manufacturing Plant is a “boiler by designation” under 35 Ill. Adm. Code 720.110.
2. As a “boiler by designation,” the two raw mill dryers at Lafarge’s Joppa Portland Cement Manufacturing Plant can use off-specification used oil for energy recovery in compliance with 35 Ill. Adm. Code 739.161 and subject to compliance with all other applicable federal and state permits, standards, and requirements and any subsequent modifications thereto.

IT IS SO ORDERED.

Section 41(a) of the Environmental Protection Act provides that final Board orders may be appealed directly to the Illinois Appellate Court within 35 days after the Board serves the order. 415 ILCS 5/41(a) (2004); *see also* 35 Ill. Adm. Code 101.300(d)(2), 101.906, 102.706. Illinois Supreme Court Rule 335 establishes filing requirements that apply when the Illinois Appellate Court, by statute, directly reviews administrative orders. 172 Ill. 2d R. 335. The Board’s procedural rules provide that motions for the Board to reconsider or modify its final orders may be filed with the Board within 35 days after the order is received. 35 Ill. Adm. Code 101.520; *see also* 35 Ill. Adm. Code 101.902, 102.700, 102.702.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on June 1, 2006, by a vote of 4-0.



Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board